Confusion between warfarin and propranolol leading to warfarin overdosage

To the editor: Physicians, especially house staff with no experience outside hospital, often forget that even the simplest aspects of modern therapeutics can overwhelm medically unsophisticated people. For example, the inadvertent misuse of drugs by patients occurs more often than most physicians realize.[1,2] An incident involving one of our patients prompted us to review "Index Medicus" from 1970 to October 1980. Because we found no accounts of similar incidents we are reporting our experience.

Case report

A 65-year-old man with Alzheimer's disease was admitted to hospital with crampy abdominal pain, weakness and lightheadedness. He depended on his wife to give him his antihypertensive medications — propranolol, 40 mg three times a day, hydralazine, and a combination of hydrochlorothiazide and spironolactone. His wife showed the attending physician three appropriately labelled pill containers.

Examination revealed a significant postural drop in blood pressure, tachycardia, and abdominal guarding and tenderness; bowel sounds were absent and there was no blood in the stool. The hematocrit and platelet count were normal, but the prothrombin and activated partial thromboplastin times were prolonged.

Three months earlier the family physician had discontinued administration of warfarin, 5 mg/d, because the patient had extremely prolonged prothrombin and partial thromboplastin times. Five days later the times were still prolonged. The patient was then treated in hospital with vitamin K and was discharged taking no anticoagulants. During this admission intravenously administered vitamin K caused the prothrombin and partial thromboplastin times to return to normal, and they were still normal 2 weeks after discharge. Meanwhile the house staff had discovered that the bottle labelled propranolol contained many green tablets identified as Warnerin (warfarin sodium), 5 mg, some green tablets identified as Inderal (propranolol hydrochloride), 40 mg, and various half-tablets and capsules. The patient's wife later recalled finding a bottle of green tablets several weeks earlier and putting them into the container labelled propranolol.

We concluded that the patient may have been taking 5 to 15 mg/d of warfarin after his wife had emptied the bottle of warfarin tablets into the propranolol container. Therefore, the patient had unwittingly continued to take warfarin even after his physician had discontinued its administration. This error almost certainly accounts for the coagulopathy that was noted on three occasions. Acute retroperitoneal hemorrhage may have caused the tachycardia and postural hypotension, although the effects of hydralazine unopposed by an adequate amount of propranolol may have contributed.

Comments

Intellectual and educational deficits handicapped our patient and his wife; however, all physicians should realize that even highly educated people may carry a variety of tablets in unlabelled or incorrectly labelled containers. Hence, it behoves the alert and conscientious practitioner to identify every medication mentioned by a patient.[3] Drug manufacturers can continue their efforts to prevent such mishaps by ensuring that commonly used drugs are dissimilar in appearance. If all brands of the same drug were identical in appearance (except possibly for a mark indicating the manufacturer's name) drug identification would be simpler for both patient and physician.[4] Finally, this case reminds us that pharmacists and nurses in the hospital and the community can play an essential role in the education of patients and in the prevention of potentially catastrophic incidents.[5]

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Legionnaires' disease and arthritis

To the editor: I wish to report a case in which Legionnaires' disease appeared to be associated with arthritis.

Case report

A 50-year-old woman had been taking propranolol, 240 mg/d, and hydrochlorothiazide, 50 mg/d, for benign, uncomplicated essential hypertension. Until recently she had smoked heavily.

In December 1979 she presented with symptoms suggesting acute bronchitis. A 1-week course of oral therapy with erythromycin, 1 g/d, gave partial remission of symptoms. Three weeks later rheumatoid polyarthritis developed, affecting the small joints of the hands and feet; however, no abnormalities were seen roentgenographically. A chest roentgenogram revealed pneumonia in the right lower lobe.

The erythrocyte sedimentation rate was 40 mm/h (Westergren); it had been 10 mm/h when the patient was examined in December. Other hematologic investigations revealed no abnormalities. The latex test for rheumatoid factor was positive at a titre of 1:320, but the fluorescent antinuclear antibody test gave negative results. Antibodies to *Legionella pneumophila* were detected at a titre of 1:1024 or greater. Tests for other infections (i.e., mycoplasmal, infectious mononucleosis and rubella) gave negative results. Results of liver function tests were normal.

The arthropathy and chest infection were still present in February 1980, when the patient presented with a fine macular rash. She had been taking 1.5 g/d of tetracycline